

PATENT COOPERATION TREATY

OFFICE OF INTELLECTUAL
PROPERTY COUNSEL
3M INNOVATIVE PROPERTIES COMPANY145
OUS DOCKETJUN 24 2005
PCT

From the INTERNATIONAL SEARCHING AUTHORITY

To:
3M INNOVATIVE PROPERTIES COMPANY
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UNITED STATES OF AMERICA

INVITATION TO ~~REFERRED TO~~ **PAID ADDITIONAL FEES**

(PCT Article 17(3)(a) and Rule 40.1)

Date of mailing
(day/month/year) 20/06/2005

Applicant's or agent's file reference
59447WO008

PAYMENT DUE
7-20-05 within **ONE MONTH** from
the above date of mailing

International application No.
PCT/US2004/043447

International filing date
(day/month/year) 23/12/2004

Applicant

3M INNOVATIVE PROPERTIES COMPANY



1. This International Searching Authority

- (i) considers that there are 4 (number of) inventions claimed in the international application covered by the claims indicated ~~below~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~below~~ on the extra sheet:

RECEIVED**JUN 27 2005****C.H. JOHNSON**

- (ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:
see annex

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

2. The applicant is hereby **invited**, within the time limit indicated above, to pay the amount indicated below:

EUR 1.550,00 x 3 = EUR 4.650
Fee per additional invention number of additional inventions total amount of additional fees

Or, _____ x _____ = _____

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. _____ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority



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JUN 24 2005

**Annex to Form PCT/ISA/206
COMMUNICATION RELATING TO THE RESULTS
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No
PCT/US2004/043447

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/76519 A (3M INNOVATIVE PROPERTIES COMPANY) 21 December 2000 (2000-12-21) claim 1; examples 1-231 -----	1-34
Y	WERMUTH ET AL: "The Practise of Medicinal Chemistry" PRACTICE OF MEDICINAL CHEMISTRY, 1996, pages 203-237, XP002190259 page 209 -----	1-3, 9, 10, 13-28, 33, 34
Y	WO 03/103584 A (3M INNOVATIVE PROPERTIES COMPANY) 18 December 2003 (2003-12-18) claims 1, 15; examples 34-53, 102, 113, 117, 118 -----	1-3, 9, 10, 13-28, 33, 34
Y	US 6 525 064 B1 (DELLARIA JOSEPH F ET AL) 25 February 2003 (2003-02-25) inv 2, 3 claim 1; examples 6, 31, 70, 88, 113, 136 -----	1-3, 9, 10, 13-28, 33, 34

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1(part),2(part),3,9,10,13-28(part),33,34

Compounds according to claim 1 in which RA and RB independently are substituents.

2. claims: 1(part),2(part),4,5,12-28(part),29,30

Compounds according to claim 1 in which RA and RB taken together form a fused aryl ring.

3. claims: 1(part),2(part),6,12-28(part)

Compounds according to claim 1 in which RA and RB taken together form a fused 5 to 7 membered saturated ring.

4. claims: 1(part),2(part),7,8,11,13-28(part),31,32

Compounds according to claim 1 in which RA and RB taken together form a fused heteroaryl- or a 5 to 7 membered saturated heterocyclic-ring.

The closest state of the art for the present application is represented by WO 00/76519 (D1) relating to imidazo[4,5-c]quinolines and tetrahydro-derivatives thereof as immunomodulators. The immunomodulators of D1 exhibit either a sulfonamide (-NHSO₂-) or a sulfamide (-NHSO₂NH-) group in the substituent on the ring nitrogen atom (cf. examples and claim 1).

The present claim 1 differs from the sulfonamides of D1 only in that the sulfonamide group in the said substituent is inversely orientated. This feature is common to all compounds according to present claim 1.

The technical problem underlying the present claims is seen in the provision of alternative immunomodulators.

The problem is solved by inverting the orientation of sulfonamide group in the substituent on ring-nitrogen of D1 (cf. examples 1-216).

Alternatively, the skilled person arrives at the present compounds by isosterically replacing one NH-group of the sulfamide group in the substituent on ring-nitrogen of D1 by a CH₂ group (cf. D1, examples 217-231 and D2, page 209).

Either of these modifications is regarded as obvious for the skilled person faced with the above mentioned problem. Therefore, the subject-matter of present claim 1 does not involve an inventive step.

Considering that the present compounds exhibiting the feature X'-SO₂NR₁R₁' are obvious from D1, the different groups of compounds according to present claims 1 do not share a common special technical

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feature as required by Rule 13.2 PCT. Therefore, the present application lacks unity of invention (Rule 13.1 PCT).

Patent Family Annex

Information on patent family members

International Application No

PCT/US2004/043447

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0076519	A	21-12-2000	US 6331539 B1	18-12-2001
			AU 766565 B2	16-10-2003
			AU 5328100 A	02-01-2001
			AU 772179 B2	08-04-2004
			AU 5328400 A	02-01-2001
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			AU 6334900 A	02-01-2001
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			BR 0011448 A	14-12-2004
			BR 0014214 A	08-09-2004
			CA 2376296 A1	21-12-2000
			CA 2376304 A1	21-12-2000
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			CN 1353609 A	12-06-2002
			CN 1354663 A	19-06-2002
			CN 1355701 A , C	26-06-2002
			CZ 20014363 A3	13-03-2002
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			EE 200100668 A	17-02-2003
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			HR 20010888 A1	31-08-2003
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			HU 0201431 A2	28-08-2002
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			HU 0202254 A2	28-10-2002
			JP 2003501466 T	14-01-2003
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			MX PA01012508 A	02-07-2002
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			NO 20015502 A	07-02-2002
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			NZ 515639 A	29-10-2004
			NZ 515967 A	31-10-2003
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			PL 352257 A1	11-08-2003
			PL 352554 A1	25-08-2003
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			US 2005032830 A1	10-02-2005
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Patent Family Annex

Information on patent family members

International Application No

PCT/US2004/043447

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6525064	B1	US 2004019076 A1	29-01-2004
		US 2004147533 A1	29-07-2004
		AU 2002312414 A1	23-06-2003
		AU 2002315006 A1	23-06-2003
		AU 2002345615 A1	23-06-2003
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		WO 03050117 A1	19-06-2003
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		US 6545016 B1	08-04-2003
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		US 2003195209 A1	16-10-2003
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		WO 0246194 A2	13-06-2002
		ZA 200305238 A	27-08-2004

Important information

Rule 40 PCT has been amended as of 1 April 2005. For general information on the protest procedure under the PCT please refer to OJ EPO 3/2005, pages 226/227.

1. As in the past the payment of any additional fee may be made under protest i.e. accompanied by a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fees is excessive according to amended Rule 40.2(c) PCT.
2. Although no longer obligatory, prior to examination of the protest by the Board of Appeal the EPO will subject the invitation to pay additional fees to an internal review which is free of charge. The result of this review will be communicated to the applicant.
3. The fee for examination of the protest (Rule 40.2(e) PCT) is payable within one month of the date of the invitation to pay additional fees (Rule 40.1(iii) PCT), however, in order to allow the applicant to consider the result of the internal review, the applicant may pay the protest fee within one month from the date of notification of the result of the review.
4. Should the applicant wish to maintain his protest in light of the review he must pay the protest fee within one month from the date of notification of the result of the internal review, in which case the protest will be referred to the Board of Appeal. Should the Board of Appeal find that the protest was entirely justified, the protest fee shall be refunded.
5. In the event of the applicant already having paid the protest fee before notification of the result of the review, the protest will be referred to the Board of Appeal **unless** the result of the internal review was that the protest was **entirely** justified **or** the applicant indicates within one month from the date of notification of the result of the review that he does not wish to continue the protest, in both cases the protest fee will be refunded.

Important Information

General

- the **claims cannot be changed** at this point in the procedure, the transmitted report is **not** the ISR (see Art. 19 PCT)
- non-payment does not lead to a **loss of rights**, a new procedure will be started on entry into the regional or national phase
- any payments have to be effected **directly** to this ISA (account details on separate sheets), payments to other entities will not be accepted
- in case of a **total of more than 2 inventions** found: when paying please **specify exactly** which claims should be searched
- an **extension of the set time limit** cannot be granted

Payment by cheque:

- the **date of payment** is considered to be the **date the original cheque is received at the EPO**, under the condition that the cheque is **covered**
- faxed cheques are not considered to be a valid payment
- only payments in EUR are accepted, no equivalents in other currencies

Payment by money transfer:

- the **date of payment** is considered to be the **date the money is booked** in the EPO bank account
- only payments in EUR are accepted, no equivalents in other currencies

Payment by deposit account:

- the **date of payment** is considered to be the date that the **authorisation** to deduct fees from the deposit account is **received at the EPO**

***note:** if you don't have a deposit account with the EPO yourself you might want to consider using the account of an associate as a safe and quick way of paying*

Payment by credit card:

- payments by **credit card** are **not possible**

Payments under protest according to Rule 40 PCT:

- the protest will **not be accepted without a payment** of additional search fee(s)
- the protest has to be **accompanied by a technical reasoning**